

WHAT IS CLAIMED IS:

1. A heat exchanger comprising:
 - a. a core having a heat exchange portion; and
 - b. a shaft, wherein at least a portion of the shaft is positioned in the core so that the stiffness of the core is increased, wherein the shaft is positioned at least adjacent to the heat exchange portion of the core.
2. The heat exchanger of Claim 1, wherein the shaft is positioned so to limit movement of the heat exchange portion and to receive loads from the heat exchange portion, so to increase the stiffness of the core
3. The heat exchanger of Claim 2, wherein the shaft is positioned through at least some of the heat exchange portion.
4. The heat exchanger of Claim 1, wherein the heat exchange portion comprises a layering of heat exchange members.
5. The heat exchanger of Claim 4, wherein the shaft is positioned at least adjacent the heat exchange members, so to limit movement of the heat exchange members and to receive loads from the heat exchange members, so to increase the stiffness of the core.
6. The heat exchanger of Claim 5, wherein the shaft is positioned through at least one of the heat exchange members.
7. The heat exchanger of Claim 6, wherein the shaft is substantially hollow to define a passage.

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8. The heat exchanger of Claim 7, wherein the shaft is permeable so that the passage is in communication with the heat exchange portion of the core. X

5 9. The heat exchanger of Claim 1, wherein the heat exchanger further comprises a load bearing member positioned adjacent the core and wherein the shaft is mounted to the load bearing member so that the load bearing member can receive loads from the shaft.

10. A heat exchanger comprising:

- 10 a. a core;
b. a duct in communication with the core;
c. a load bearing member positioned adjacent to the core; and
d. a first mount attaching the duct to the load bearing member so that the load bearing member can receive loads from the duct.

15 11. The heat exchanger of Claim 10, wherein the duct has a longitudinal axis and wherein the first mount restrains the duct so to allow the transfer of loads aligned substantially with the longitudinal axis of the duct, from the duct to the load bearing member.

20 12. The heat exchanger of Claim 11, wherein the first mount restrains the duct so to allow the transfer of torsional loads from the duct to the load bearing member.

25 13. The heat exchanger of Claim 12, wherein the first mount is adjustable to allow the duct to expand separately from the load bearing member.

14. The heat exchanger of Claim 15, wherein the first mount comprises:

- a. a limiter mounted to the duct;
- b. a channel defined by the load bearing member, wherein the limiter is received by the channel such that the movement of the limiter is restrained by the channel.

5 15. The heat exchanger of Claim 10, wherein the duct extends into the core.

10 16. The heat exchanger of Claim 15, wherein the duct can contact the core and transfer loads to the core.

15 17. The heat exchanger of Claim 12, wherein the heat exchanger further comprises a second mount attached between the duct and the core so to transfer loads between the duct and the core.

 18. The heat exchanger of Claim 17, wherein the first mount substantially restrains axial movement of the duct and wherein the second mount substantially restrains lateral movement of the duct.

20 19. The heat exchanger of Claim 18, wherein the duct further comprises a length and a core end, wherein the core end is positioned within the core and wherein the first mount is positioned along the length of the duct and the second mount is positioned near the core end of the duct.

25 20. A heat exchanger comprising:

- a. a core having a heat exchange portion;
- b. a duct extending into the core, in communication with the core and at least adjacent the heat exchange portion;

- c. a load bearing member; and
- d. a mount positioned between the duct and the load bearing member attaching the duct to the load bearing member, so that the load bearing member can receive loads from the duct.

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21. The heat exchanger of Claim 20, wherein the duct has a longitudinal axis and wherein the mount restrains the duct so to allow the transfer of loads substantially aligned with the longitudinal axis of the duct, from the duct to the load bearing member, wherein the mount restrains the duct so to allow the transfer of torsional loads from the duct to the load bearing member, and wherein the mount is adjustable to allow the duct to expand separately from the load bearing member.

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22. The heat exchanger of Claim 21, wherein the duct is permeable so that a gas may pass between the duct and the core.

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23. The heat exchanger of Claim 22, wherein the heat exchange portion comprises layers of heat exchange members, wherein the duct passes through at least some of the heat exchange members and wherein the duct can contact the heat exchange members and transfer loads to the heat exchange members.

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24. A heat exchanger comprising:

- a. a core;
- b. a duct in communication with the core; and
- c. a sliding mount positioned between the duct and the core so that the sliding mount can receive loads from the duct while allowing the duct to move relative to the core.

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25. The heat exchanger of Claim 24, wherein the sliding mount

substantially restrains lateral movement of the duct while allowing substantially axial movement.

26. The heat exchanger of Claim 25, further comprising an axial mount
5 positioned between the core and the duct, wherein the axial mount substantially
restrains axial movement of the duct.

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